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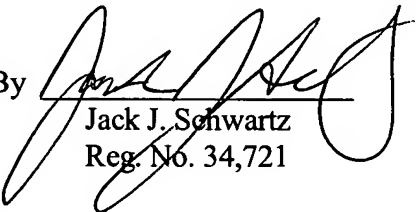
SUBSTITUTE SPECIFICATION

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Attached please a substitute specification for the subject patent application. Changes to the original application are shown in strikethrough and any additions are indicated by underlining. Applicant respectfully submits that no new matter is added by the substitution of the attached Substitute Specification.

Respectfully submitted,
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FLASH FLUSH VALVE TOILETDRAWING LIST

- ~~Fig. A—Elevation view, toilet, right side~~
~~Fig. B—Central vertical section view~~
~~Fig. C—Front elevation view~~
~~Fig. D—Rear elevation view~~
~~Fig. E—View from under toilet~~
~~Fig. F—Section B-B~~
~~Fig. G—Section A-A~~
~~Fig. H—View from above toilet~~
~~Fig. I—View from under the upper part of the toilet~~
~~Fig. J—View from above the lower part of the toilet~~

TOILET
ITEM DESCRIPTION

- ~~10—Main body of toilet~~
~~11—Toilet tank lid~~
~~12—Flush control handle~~
~~13—Seat and seat lid~~
~~14—Point of water entry into toilet~~
~~15—Rear opening for toilet mounting and maintenance~~
~~16—Water pipe for the toilet bowl rim~~
~~17—Toilet bowl~~
~~18—Orifices pierced through the bowl rim for the flush water~~
~~19—Orifices in the bottom of the bowl, for priority evacuation of bowl contents~~

- ~~20—Toilet bowl siphon~~
- ~~21—Toilet bowl accessory chamber~~
- ~~22—Air reservoir with diaphragm~~
- ~~23—Orifices for bolts anchoring toilet to floor~~
- ~~24—Flush valve (flushometer)~~
- ~~25—Water conduit to orifice (19) at bottom of bowl~~
- ~~26—Water conduit, connected at 90 degrees from conduit (26) to supply bowl rim (16).~~

WALL MOUNTED TOILET

DRAWING LIST

- ~~Fig. A—Lateral elevation view~~
- ~~Fig. B—Front elevation view~~
- ~~Fig. C—View from above~~
- ~~Fig. D—View from above and in the rear wall of the toilet when the wall lid is removed~~
- ~~Fig. E—Central vertical cross section view~~
- ~~Fig. F—Toilet anchoring details~~
- ~~Fig. G—Wall hanger~~
- ~~Fig. H—Double hanger~~
- ~~Fig. I—Hanger extension~~
- ~~Fig. J—Hanger support~~
- ~~Fig. K—Vertical cross section view of wall cover (11)~~
- ~~Fig. L—Driftbolt (31) and orifice (30), lid assembly (11) on the toilet~~
- ~~Fig. M—Central section view of toilet siphon and sewer drain~~
- ~~Fig. N—Rear view of siphon and wall mounted toilet.~~

WALL MOUNTED TOILETITEM DESCRIPTION

- ~~10—Wall mounted toilet~~
- ~~11—Tank cover for wall mounted toilet~~
- ~~12—Flush handle~~
- ~~13—Anchoring bolts~~
- ~~14—Orifices for bolting the toilet seat 15—[illegible] of the toilet [X-ed out] 16—Water conduit around bowl rim~~
- ~~17—Toilet bowl~~
- ~~18—Orifices under bowl rim~~
- ~~19—Orifices at bottom of bowl 20—Toilet siphon~~
- ~~21—Accessory chamber~~
- ~~22—Air reservoir~~
- ~~23—Bolting plate for toilet siphon (20) with sewer drain 24—Flush valve (flushometer)~~
- ~~25—Wall hanger~~
- ~~26—Double hanger~~
- ~~27—Extension~~
- ~~28—Hanger support~~
- ~~29—Orifices for nailing and screwing the wall framework 30—Orifice for wall mounted tank lid (11) driftbolt~~
- ~~31—Wall mounted tank lid driftbolt~~
- ~~32—Hanger for holding up the wall mounted tank lid~~
- ~~33—Flexible sealed coupling for assembling siphon (20) to the sewer line~~

ANCHORING SYSTEMDRAWING LIST

Fig-A

Perspective elevation view of the toilet anchoring stem

ITEM DESCRIPTION~~10—~~

Sewer line attachment base, the most popular type of attachment

~~11-~~

Floor base bolt

~~12-~~

Hexagonal threaded bushing with head and groove for use with standard slot screwdriver

~~13-~~

Assembly bolt for bushings (12) and (12) [sic] 14-

Connecting bolt for toilet seat

VALVE

(flushometer)

DRAWING LIST

~~Fig. A—Perspective view of valve (10) (flushometer)~~

~~Fig. B—Top of valve (10) and (11).~~

~~Fig. C—Lateral elevation view (see connecting pipe (15) with 15 degree bend) Fig. D—Bottom of valve (10)~~

~~Fig. E—Lateral front elevation of connecting pipe (15).~~

~~Fig. F—Bottom of lower portion of valve (10).~~

~~Fig. G—Section view AA of the valve, showing water entry point (14) and exit
———point (18).~~

~~Fig. H—Section view BB of the valve, showing connecting pipe (15), ball valve
(22), and water outlet conduit (18). Fig. I—Bottom of upper part of valve (11) (see
vault (29), pipelines (19) and (20)» Fig. J—Section view CC of upper part (11) (see pipelines
(19), (20) and mini
———valve (12)».~~

~~Fig. K—View from below flexible diaphragm (21), (see 6 orifices (13)», for
———assembly bolts in parts (10) and (11), 2 orifices for pipelines (10) and
———(20), and control plug (31).~~

~~Fig. L—Section view of diaphragm (21), Fig. M—Side view of diaphragm (21).~~

VALVE
ITEM DESCRIPTION

- 10—View, lower part of valve
- 11—View, upper part of valve
- 12—Adjustable mini valve
- 13—Assembly orifices for 8 standard bolts
- 14—Water inlet pipe
- 15—Pipe for assembling the valve to the toilet and to the flush handle
- 16—Support spacing blocks for the toilet tank wall, fig. C.
- 17—Toilet tank walls
- 18—Outlet pipe for contents flushed from toilet
- 19—Pipe passing from ball valve (22) for activating flush mechanism
- 20—Pipe passing through the mini valve for regulating filling of space (22), fig. G. 21—Flexible diaphragm
- 22—Ball valve in flush activator
- 23—Space for accommodating hydraulic pressure on diaphragm (21)
- 24—Space for accommodating hydraulic pressure under diaphragm 2; [sic] 25—Assembly washer for holding plug (31) in place.
- 26—Standard bolt with nut
- 27—Square extension for adjusting inside the square opening in wall (17) of the
——toilet tank
- 28—Dotted lines showing the movement of diaphragm (21), fig. H, activated by
——changes in hydraulic pressure
- 29—Tubular vault for housing pressure spring on diaphragm (21), and where
conduits (19) and (20) meet.
- 30—Pressure spring on diaphragm (21)
- 31—Control plug, affixed under diaphragm 21.

FLUSH HANDLE

DRAWING LIST

Fig. A—Front view of handle (10).

~~Fig. B Section view AA of handle~~

~~Fig. C Rear view of handle~~

~~Fig. D Bottom view of handle~~

~~Fig. E Side view of handle~~

~~Fig. F Front view of chassis (11)~~

~~Fig. G Section view BB of chassis (11)~~

~~Fig. H Front view of chassis (11)~~

~~Fig. I Central assembly block (12)~~

~~Fig. J Side view of central block~~

~~Fig. K Front view of central block~~

~~Fig. L Section view of washer (13)~~

~~Fig. M Front of washer (13)~~

~~Fig. N Front elevation of chassis (11)~~

~~Fig. O Extension 1 of ball valve assembly arm Fig. P Extension 2 of ball valve assembly arm~~

TOILET HANDLE ITEM DESCRIPTION

~~10 Lid for handle (10)~~

~~11 Chassis for handle (10)~~

~~12 Central block for handle (10)~~

~~13 Assembly washer for central block (12) to hold chassis (11) in a slot 14 Bolt for assembling handle cover to chassis~~

~~15 Adjustment orifices for assembly arms so that the ball valve is sealed 16 Recess in the handle cover for recess (17)~~

~~17 Recess in the chassis for recess (16)~~

~~18 Stabilizing support for the handle cover~~

~~19 Springs that bring the handle back into the vertical position~~

~~20 Extension 1 to activate ball valve (22)~~

~~21 Extension 2 to activate ball valve (22)~~

SPECIFICS

~~In all areas of our planet, potable water resources are gradually diminishing in spite of~~

restrictions imposed in some countries. Seeing the water levels in lakes, rivers, and the water table getting lower is troubling to all nations on earth. Closer to home, in our North American households, 45% of all potable water used is consumed by our conventional toilets. Americans use up 50,000 liters of potable water to evacuate 600 liters of waste, a ratio of 83% (source ECONOWATCH USA.). Specialized organizations have affirmed that 5 billion liters of potable water are used in the USA every day.

In North America, some efforts have been taken to reduce consumption of water in our toilets to 1.6 LPF; even so these toilets have not achieved the level of performance required to satisfy consumers.

In the face of these problems, I became interested in them. After a few years of research and experimentation, I succeeded in constructing prototypes of toilets that were more sanitary at the bolting level on the floor, with a superior flushing performance, on average, and water consumption that is even more greatly reduced, and whose flush cycle is 8 seconds long.

These toilets can be installed on any conventional floor attachment base, and can be connected to the same water supply piping system.

It is known that 80% of our conventional toilets lose water 24 hours per day, because the flap gate in the reservoir closes only by gravity, without any pressure. This flow of water is almost invisible, because the piping between the supply tank and the toilet bowl are internal.

With a new valve (flushometer) invented for this toilet, a flexible diaphragm covering the flush evacuation conduit is held in place by the water supply pressure, which reduces to zero all losses by flow out of the toilet tank between flushes.

During my research, I developed two different toilets, the first model for installation on the floor, and a second model hung on the wall, which leaves the floor completely free. These two toilet models include 5 series of drawings, which are complementary to each other.

FIELD OF THE INVENTION

[0001] This invention pertains to plumbing fixtures in general and, more particularly to flush toilets.

BACKGROUND OF THE INVENTION

[0002] Global potable water resources are gradually diminishing in spite of restrictions imposed by some countries that are intended to maintain these resources. The reduction in water levels in lakes, rivers, and the water table getting lower is troubling to all nations and it is desirous that this reduction be slowed. In North American households, 45% of all potable water used is consumed by our conventional toilets. Americans use up 50,000 liters of potable water to evacuate 600 liters of waste, a ratio of 83% (source ECONOWATCH USA.). Specialized organizations have affirmed that 5 billion liters of potable water are used in the USA every day.

[0003] Thus, it is desirable to manufacture and use toilets that are more sanitary and secure in the manner in which they are bolted to the floor. It is further desirable to manufacture and use a toilet having a superior flushing performance which on average reduces the amount of water consumed. These improved toilets may be installed on any conventional floor attachment base, and can be connected to the same water supply piping system to which conventional toilets are connected.

[0004] Approximately 80% of our conventional toilets lose water 24 hours a day because the flap gate located in the reservoir of conventional toilets only close by gravity, without any pressure. Thus, when the flap gates are improperly closed, there is a flow of water which is not visible to most users because the piping between the supply tank and the toilet bowl are internal.

[0005] It is therefore desirous to produce a new valve (flushometer) for toilets. The new value includes a flexible diaphragm covering the flush evacuation conduit and is held in place by the water supply pressure. This inventive method of maintaining the diaphragm closed substantially reduces or eliminates the loss of water due from the toilet tank that has previously occurred between flushes. It is further desirable that the a toilet having the ability to reduce extraneous water loss be at least one of a floor mounted toilet and a wall mounted toilet.

BRIEF SUMMARY OF THE INVENTION

[0006] An object of the present invention is to provide a flush toilet that includes an air reservoir having an interior diaphragm installed inside a tank in the toilet. The air reservoir has a hydraulic pressure maintained by a water supply coming from a conduit.

At least two propulsion jets are located in a bottom portion of a toilet bowl. These propulsion jets are capable of ejecting contents of the bowl into a siphon upon activation of a flush mechanism. Furthermore, a double water-supply pipe system is located between a valve and the tank. The double water-supply pipe system includes a first pipe that extends from the valve to orifices in the bottom of the toilet bowl. A second pipe is connected at substantially 90° to the first pipe and extends from the first pipe to a rim of the toilet bowl.

[0007] Another object of the present invention is to provide a system for hanging a toilet onto a wall. The hanging system includes a plurality of hangers attached to the toilet and connected to the wall. A removable toilet lid is mounted to the wall, the removable lid having a top that is held in place by a flat hook secured to the wall, and a bottom that is secured to the toilet. A drain acts as a conduit between a toilet siphon, otherwise known as a P-Trap, and a sewer line. The drain is secured to the siphon which is equipped with a sealing cushion. The drain, siphon and sewer line are held in place by a flexible sealed coupling, and the sealing cushion holding the toilet in place on the wall.

[0008] A further object of the present invention is to provide a toilet flush valve that has a first part and a second part secured about a diaphragm. A pipe is integral with the second part, and a ball valve is located within the pipe, the ball valve capable of activating the flush mechanism.

[0009] Yet a further object of the present invention is to provide a flushing mechanism for a flush toilet. The flushing mechanism includes a handle attached to a wall of a toilet tank for activating the flush mechanism. A handle cover is also attached to the wall of the toilet tank in proximity to the handle. An adjustable central union block is located in the toilet and connects the flush valve with the handle. A chassis is located in a slot between a central block and a washer, the chassis capable of limited rotation so as to operate the flush mechanism. At least one tension spring is in communication with the handle, a plurality of orifices are located in the chassis for adjusting an extension angle bracket, thereby sealing the ball valve.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Figure 1 is a side elevation view of a floor-mounted flush toilet.

[0011] Figure 2 is a sectional view taken along the side of the flush toilet.

- [0012] Figure 3 is a front elevation view of a floor mounted flush toilet.
- [0013] Figure 4 is a rear elevation view of a floor mounted flush toilet with a cutaway showing the flush tank.
- [0014] Figure 5 is a bottom view of a flush toilet.
- [0015] Figure 6 is a sectional view of the front of a flush toilet taken along line BB in Figure 2
- [0016] Figure 7 is a sectional view of the rear of a flush toilet taken along line AA in Figure 2.
- [0017] Figure 8 is a top view of a flush toilet.
- [0018] Figure 9 is a sectional view of the top part of the toilet taken along line DD in Figure 1.
- [0019] Figure 10 is a sectional view of the lower part of the toilet taken along line CC in Figure 1.
- [0020] Figure 11 is a side elevation view of a wall-mounted flush toilet.
- [0021] Figure 12 is a front elevation view of a wall-mounted flush toilet.
- [0022] Figure 13 is a top view of a wall-mounted flush toilet.
- [0023] Figure 14 is a top view of the wall-mounted flush toilet showing the inside of the flush box.
- [0024] Figure 15 is sectional view of the side of the wall-mounted flush toilet.
- [0025] Figure 16 is a detail view of the wall anchoring components.
- [0026] Figure 17 is a top and side view of a wall hanger.

- [0027] Figure 18 is a top and side view of a double hangar.
- [0028] Figure 19 is top and side view of a hangar extension.
- [0029] Figure 20 is a top and side view of a hangar support.
- [0030] Figure 21 is a sectional side view of the wall cover.
- [0031] Figure 22 is a side view of the lift assembly on the toilet.
- [0032] Figure 23 is a sectional view of the toilet siphon and sewer drain.
- [0033] Figure 24 is a rear view of the siphon on a wall-mounted toilet.
- [0034] Figure 25 is a perspective view of the toilet anchoring system.
- [0035] Figure 26 is a perspective view of a flush valve.
- [0036] Figure 27 is a top view of the flush valve.
- [0037] Figure 28 is a side elevation view of the flush valve.
- [0038] Figure 29 is a bottom view of the flush valve.
- [0039] Figure 30 is a side elevation of a connecting pipe.
- [0040] Figure 31 is a bottom view of the lower portion of the valve.
- [0041] Figure 32 is a sectional view of the flush valve taken along line AA of Figure 27.
- [0042] Figure 33 is a sectional view of the flush valve taken along line BB of Figure 27.
- [0043] Figure 34 is a bottom view of the upper part of the flush valve.

- [0044] Figure 35 is a sectional view of the upper part of the flush valve taken along line CC in Figure 34.
- [0045] Figure 36 is a bottom view of the flexible diaphragm.
- [0046] Figure 37 is a side view of the diaphragm.
- [0047] Figure 38 is a sectional view of the diaphragm taken along line DD of Figure 36.
- [0048] Figure 39 is a front view of the flush handle.
- [0049] Figure 40 is a sectional view of the flush handle taken along line A-A of Figure 39.
- [0050] Figure 41 is a rear view of the flush handle.
- [0051] Figure 42 is a bottom view of the flush handle.
- [0052] Figure 43 is a side view of the flush handle.
- [0053] Figure 44 is front view of the flush handle chassis.
- [0054] Figure 45 is a sectional view of the chassis taken along line B-B of Figure 44.
- [0055] Figure 46 is front view of the chassis.
- [0056] Figure 47 is top view of a central block.
- [0057] Figure 48 is a side view of a central block.
- [0058] Figure 49 is a front view of a central block.
- [0059] Figure 50 is sectional view of a washer.
- [0060] Figure 51 is a front view of a washer.

- [0061] Figure 52 is a front elevation view of a chassis.
- [0062] Figure 53 is a first extension of a ball valve assembly arm.
- [0063] Figure 54 is a second extension of a ball valve assembly arm.

LISTING OF REFERENCE NUMERALS

- 10 - Main body of toilet
- 11 - Toilet tank lid
- 12 - Flush control handle
- 13 - Seat and seat lid
- 14 - Point of water entry into toilet
- 15 - Rear opening for toilet mounting and maintenance
- 16 - Water pipe for the toilet bowl rim
- 17 - Toilet bowl
- 18 - Orifices pierced through the bowl rim for the flush water
- 19 - bottom of the bowl orifice for priority evacuation of bowl contents
- 20 - Toilet bowl siphon
- 21 - Toilet bowl accessory chamber
- 22 - Air reservoir with diaphragm
- 23 - Orifices for bolts anchoring toilet to floor
- 24 - Flush valve (flushometer)
- 25 - Water conduit to orifice (19) at bottom of bowl

26 - Water conduit, connected at 90 degrees from conduit (26) to supply bowl rim

25 - Wall hanger

26 - Double hanger

27 - Extension

28 - Hanger support

29 - Orifices for nailing and screwing the wall framework

30 - Orifice for wall-mounted tank lid (11) driftbolt

31 - Wall-mounted tank lid driftbolt

32 - Hanger for holding up the wall-mounted tank lid

33 Flexible sealed coupling for assembling siphon (20) to the sewer line

34 hanger

36 hanger extension

38 double hanger extension

39 drain

40 sewer pipe

42 Bolting plate for toilet siphon (20) with sewer drain 24 - Flush valve (flushometer)

44 lower valve

46 upper vale

48 adjustable mini-valve

- 50 valve assembly orifices
- 52 pipe for assembling the valve to toilet and flush handle
- 54 support spacing blocks for toilet tank wall
- 56 toilet tank walls
- 58 outlet pipe for toilet contents
- 60 pipe passing from ball valve (22) for activating flushing mechanism
- 61 pipe passing through the mini-valve for regulating filling of space (22)
- 62 ball valve in flush activator
- 64 space for accommodating hydraulic pressure on diaphragm
- 66 movement of diaphragm (21) activated by changes in hydraulic pressure
- 68 vault for housing pressure spring on diaphragm (21) and point of meeting of (60) and (61)
- 70 pressure spring
- 72 control plug
- 74 extension for adjusting inside square opening in wall (56)
- 76 standard bolt and nut
- 78 washer
- 80 handle lid
- 82 chassis for handle
- 84 central block for handle
- 86 assembly washer for central block to maintain chassis in slot

- 88 bolt for assembling handle cover to chassis
- 90 adjustment orifices for assembly arms for sealing ball valve
- 92 handle cover recess
- 94 chasis recess
- 96 stabilizer for handle cover
- 98 spring that bring the handle back into the vertical position
- 100 first extension for activating ball valve
- 102 second extension for activating ball valve

DETAILED DESCRIPTION OF THE INVENTION

[0064] The invention, as shown in Figures 1-10, is directed to a flush toilet. The flush toilet includes an air reservoir having an interior diaphragm 22 installed inside a tank 10 in the toilet. The air reservoir 22 has a hydraulic pressure maintained by a water supply 14 coming from a conduit. At least two propulsion jets are located in a bottom portion of a toilet bowl 19. Alternatively, a single propulsion jet may be equally effective. These propulsion jets are capable of ejecting contents of the bowl into a siphon 20 upon activation of a flush mechanism 24. Furthermore, a double water-supply pipe system is located between a valve 24 and the tank 10. The double water-supply pipe system includes a first pipe 25 that extends from the valve to orifices 19 in the bottom of the toilet bowl. A second pipe 26 is connected at substantially 90° to the first pipe 25 and extends from the first pipe to a rim 16 of the toilet bowl 17. The rim 16 includes a plurality of orifices 18 positioned around a periphery thereof for expelling water from conduit 26 into the bowl 17 thereby causing the contents of the bowl to be ejected into siphon 20.

[0065] In one embodiment of the invention, the toilet bowl 17 has a base, and at least two orifices 23 are defined in the base of the toilet bowl to allow the toilet 17 to be anchored to a floor.

[0066] In yet another embodiment, a handle 12 is attached to a wall of the tank, the handle 24 is able to selectively activate flush mechanism of the toilet.

[0067] The toilet is anchored to the floor through the use of an anchoring rod that includes a first bushing, inserted into a top of the toilet. The anchoring rod secured to a second bushing attached to a connector to hold the toilet to the floor. Preferably, the connector is a bolt. It is also preferable that the first and second bushing are hexagonal in shape. However, any connector may be used so long as the connector is able to secure the toilet to the floor. Additionally, the first and second bushings may be formed in any geometrical shape and are able to receive the connector for securing the toilet to the floor.

[0068] Figures 11-20 is an alternate embodiment of the flush valve toilet of the present invention. As shown in Figures 11 – 20, the toilet is mounted to a wall as opposed to being anchored to the floor. This is accomplished by a system comprised of a plurality of hangers 34, attached to the toilet 17 and connected to the wall. The hangers 34 are supported by hanger support 28 which are able to support the weight of the toilet 17 attached thereto. The hangers 34 include a plurality of orifices 29 for receiving at least one of a nail and a screw for securing the hangers 24 to the wall. Connected to the hanger 34 positioned within the wall is a double hanger 36 also having a plurality of hanging orifices 29 extending therethrough. An anchor bolt 13 is passed through the toilet 17 and received within a respective orifice 29 thereby securing the toilet 17 thereto.

[0069] A removable tank lid 11 is also mounted to the wall. The removable tank lid 11 is releasably connected to the wall via a block 32 and is held in place by a flat hook secured to the wall as shown in Figure 15. The tank lid 11 is further secured to the toilet 17 via a bolt received through a mounting orifice 30. A drain 39 acts as a conduit between a toilet siphon 20 and a sewer line 40. The drain is secured to the siphon which is equipped with a sealing cushion. The drain 39, siphon 20 and sewer line are 40 all maintained in a stable position by a flexible sealed coupling 33.

[0070] Figures 21-24 show the system for hanging a toilet 17 onto a wall, the system is comprised of a plurality of hangers 34, 32 attached to the toilet and connected to the wall. A removable tank lid 11 is mounted to the wall using the hanger 32. The hanger 32 includes a flat hook secured to the wall, and a bottom that is secured to the toilet. The toilet 17 is further secured by a bolting plate 42 which connects the siphon 20 to the drain 39. The drain 39 functions as a conduit between the toilet siphon 20 and a

sewer line 40. The drain 39 is secured to the siphon 20 via the sealing cushion 43. The drain 40, siphon 20 and sewer line 40 are held in place by a flexible sealed coupling 33.

[0071] Figures 25 – 38 show a flush valve 24 for the flush value toilet of the present invention. The flush valve 24 is comprised of a first part 44 and a second part 46 secured about a diaphragm 21. The diaphragm 21 is secured between the first part 44 and the second part 46 by securing mechanism received through assembly orifices 50 which extend through both the first part 44 and the second part 46. A pipe 60 is positioned integral with the second part 44 and a ball valve 62 is located within the pipe 60 such that the ball valve 62 can selectively activate the the flush mechanism.

[0072] In one embodiment, the pipe is attached to a flush control handle. In still another embodiment, an adjustable valve 48 is installed in the pipe 62 , and the adjustable valve capable of interacting with the diaphragm 21 so as to close the flush mechanism.

[0073] The diaphragm 21 can act as a sealing cushion between the first and second part, 44 and 46, respectively. In this embodiment, the diaphragm 21 pushes up or down depending on variations in hydraulic pressure, thereby starting or stopping the flush mechanism. A plug that includes a plurality of guide vanes may also be affixed to the diaphragm. In still another embodiment, a tubular vault houses a pressure spring located on the diaphragm, and a first and second conduit intersect at the vault.

[0074] Figures 39-54 is a flushing mechanism for a flush toilet the present invention. This flushing mechanism is comprised of a handle 82 attached to a wall of a toilet tank 56. Movement of the handle 82 from a first position to a second position selectively activates the flush mechanism of the flush valve toilet of the present invention. A handle cover 80 is attached to the wall 56 of the toilet tank in proximity to the handle 82. An adjustable central union block 84 is located within the toilet tank. The central union block 84 connects the flush valve 24 with the handle 82. A chassis is located in a slot between a central block and a washer, the chassis capable of limited rotation so as to operate the flush mechanism. At least one tension spring 98 in communication with the handle 82, and a plurality of orifices 90 are located within the chassis for adjusting an extension angle bracket, thereby sealing the ball valve 62.

[0075] All references, including publications, patent applications, and patents, cited herein are hereby incorporated by reference to the same extent as if each reference were individually and specifically indicated to be incorporated by reference and were set forth in its entirety herein.

[0076] The use of the terms “a” and “an” and “the” and similar referents in the context of describing the invention (especially in the context of the following claims) are to be construed to cover both the singular and the plural, unless otherwise indicated herein or clearly contradicted by context. Recitation of ranges of values herein are merely intended to serve as a shorthand method of referring individually to each separate value falling within the range, unless otherwise indicated herein, and each separate value is incorporated into the specification as if it were individually recited herein. All methods described herein can be performed in any suitable order unless otherwise indicated herein or otherwise clearly contradicted by context. The use of any and all examples, or exemplary language (e.g., “such as”) provided herein, is intended merely to better illuminate the invention and does not pose a limitation on the scope of the invention unless otherwise claimed. No language in the specification should be construed as indicating any non-claimed element as essential to the practice of the invention.

[0077] Preferred embodiments of this invention are described herein, including the best mode known to the inventors for carrying out the invention. It should be understood that the illustrated embodiments are exemplary only, and should not be taken as limiting the scope of the invention.